

REMARKS/ARGUMENTS

In an Office Action dated June 10, 2004, at paragraph 1 on page 2, the Examiner stated "This application is identified as a continuation application ... and as series of parent applications .. to application 09/095,804, now US Patent 6,049,220. However, it appears that what is claimed herein is not disclosed in those earlier applications and that this is not properly a continuation of those applications in that it does not present the same material as presented in those earlier applications. Correction of the continuation status is needed."

Applicants respectfully submit that the current claims are supported in disclosure that was incorporated by reference in US Patent 6,049,220 at column 1 lines 7-9 and 20-24 which states in pertinent part:

This application is related to and incorporates by reference herein in their entirety, the following ... US Patent Applications:

...

Serial No. 09/095805, entitled "AN APPARATUS AND METHOD FOR MEASURING A PROPERTY OF A LAYER IN A MULTILAYERED STRUCTURE," filed June 10, 1998, by Peter G. Borden et al.

Note that US Application 09/095,805 which is cited in the above-quoted text, has now issued as US Patent 6,054,868. This US Patent 6,054,868 provides full support for Claim 1 of the current application as follows. Support for the "heating" limitation of Claim 1 is found in, for example, column 2, lines 35-40 of US Patent 6,054,868; support for the "measuring" limitation of Claim 1 is found in, for example, column 2, lines 49-53 of US Patent 6,054,868; and support for the "using" act of Claim 1 is found in, for example, column 2 lines 58-60 of US Patent 6,054,868.

In fact, all figures and all text of the current application are identically present in US Patent 6,054,868. Since US Patent 6,054,868 was incorporated by reference in its entirety

into US Patent 6,049,220 from which the current application claims priority, Applicants respectfully request the Examiner to withdraw his request for a correction of continuation status.

In view of the above remarks, Applicants submit that Claims 28-37 are in form for allowance.

Claims 38-41 were rejected as being obvious over the teachings of US Patent 5,706,094 granted to Maris. In rejecting these claims, the Examiner cited to "short light pulses" of Maris (see bottom of page 2 of the Office Action). To distinguish over the teachings of Maris, Applicants hereby narrow Claim 38 to require use of a continuous heat source during heating. Support for this amendment is found throughout the specification, including, for example, page 19 lines 12-19 and page 36 line 15.

Applicants submit that short pulses as disclosed by Maris at column 3 lines 12-13 contain numerous frequencies (as apparent from a Fourier transform thereof). Hence Maris's method generates a significant thermal wave when using the short duration power pulses. In contrast, Claim 38 modulates a continuous heat source at a sufficiently low frequency to ensure that a majority of heat is transferred out of the region by diffusion rather than by a thermal wave.

The Examiner is respectfully requested to consider the low frequency modulation limitation in Claim 38 which is written to explicitly distinguish over use of a thermal wave.

Claim 38 also recites another limitation that is no where disclosed or suggested by Maris. Specifically, Claim 38 requires determining an indication of thermal conductivity of a dielectric material based on change in reflectance of conductive material. Maris discloses at column 3, lines 11-20 a prior art teaching for determining a metal film's change in optical reflectivity, and the rate at which the film cools by thermal conduction into a semiconductor dielectric substrate. However the Examiner has not shown that Maris's film cooling rate necessarily indicates thermal conductivity of the substrate, in order to support an inherency rejection.

Furthermore, Maris discloses "an overlying layer that does not significantly absorb the pump or probe beams" (see column 12 line 67 to column 12 line 1). In view of this disclosure (which cannot be ignored in an obviousness analysis), the skilled artisan would

be lead away from measuring reflectance of the overlying layer, to determine thermal conductivity of the underlying substrate.

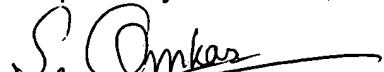
Moreover, Maris's substrate is a semiconductor dielectric which is not necessarily same as Claim 38's dielectric. The Examiner cannot simply ignore the adjective "semiconductor" that qualifies Maris's underlying layer. There appears to be no suggestion that Maris's method should be extended to evaluate a dielectric layer located underneath a conductive layer. In contrast, Claim 38 explicitly states that a programmed computer is used to convert reflectance of the conductive material into an indication of thermal conductivity of the dielectric material

In view of the above, Applicants submit that Claim 38 and its dependent Claims 39-41 are patentable over the teachings of Maris. New Claims 42-44 depend from Claim 38 and are supported at, for example, page 8 lines 22-29. Therefore these claims are also believed to be allowable.

For the above reasons, Applicants respectfully request allowance of all pending claims. Should the Examiner have any questions concerning this response, the Examiner is invited to call the undersigned at (408) 982-8200, ext. 3.

Via Express Mail Label No.
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Respectfully submitted,



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